Message

From: Lo, Doris [Lo.Doris@epa.gov]
Sent: 9/10/2019 5:12:05 PM
To: Vanderspek, Sylvia@ARB [Sylvia.Vanderspek@arb.ca.gov]; Carr, Laura@ARB [Laura.Carr@arb.ca.gov]; Tasat, Webster@ARB [wtasat@arb.ca.gov]
CC: Mays, Rory [Mays.Rory@epa.gov]; Kurpius, Meredith [Kurpius.Meredith@epa.gov]
Subject: FW: Follow up questions on glass melting and IC engines for MSM analysis

FYI, here are the glass melting and IC engine questions we have sent to SJV.

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From: Lo, Doris
Sent: Monday, September 9, 2019 3:18 PM
To: jon.klassen@valleyair.org
Cc: Kurpius, Meredith <Kurpius.Meredith@epa.gov>; Law, Nicole <Law.Nicole@epa.gov>; Gong, Kevin <Gong.Kevin@epa.gov>
Subject: Follow up questions on glass melting and IC engines for MSM analysis

Jon,

Following up on our discussion from last Tuesday, September 3rd, below we provide the questions to guide you as you develop the supplemental MSM analyses for the glass melting and internal combustion engine source categories. Please forward to others as needed. It is our hope that the information we have asked you to compile will allow us to better understand the available control technologies for these sources and allow you to expand your conclusions concerning the technological and economic feasibility of the available controls. We may have follow-up questions at a later point and are happy to clarify as needed.

4354 Glass Melting Furnaces

- We understand that the Valley has 3 container glass facilities, two with oxyfuel firing and one with SCR. Please confirm and provide the names and currently installed emission controls for each facility.
- How large are the facilities?
    - What are their heat input rate and what is the number of furnaces?
    - What are their glass output rate on an average production day, and in idle operations?
- What kind of containers are they making? How do the different types of containers being manufactured impact control efficiency or NOx emissions?
- When was the last rebricking for each furnace? When will their current glass melting campaign end?
- We see on Tri-Mer's website that they have worked with Gallo Glass on an UltraCat ceramic catalyst system and had installed one unit of six as of 2016. Can you confirm this and are they planning to operate the UltraCat ceramic catalyst system it if it is installed?
    - Can you supplement your analysis for controls by evaluating the Tri-Mer UltraCat for cost feasibility?
    - Facilities may not meet the .24 lbs/ton limit, but can you demonstrate that UltraCat as a control device is not otherwise widely adopted and feasible for container glass applications?
- What is the cost for other measures, such as oxyfuel fired operations and traditional SCR (technologies other than Tri-Mer UltraCat ceramic catalyst) in combination?

- What is the rate of control efficiency degradation for glass melting furnaces in the SJV in their existing configuration?
- We plan to ask for the CEMS and other data from the Owens-Illinois facility in Vernon, CA. Is there anything else you think we should ask for and can we get the same information from your facilities?
    - Emission spikes
    - Idling periods
    - Operational rates
    - Glass color change-overs
    - Frequency of glass container mold change-overs

4702 IC Engines

- Provide an inventory of Agriculture Operations (AO) engines including: location, age, size, type (SI or CI, if SI lean or rich burn), which limit (from the rule) the engine complies with, what are current controls on the engines.
    1. How many agricultural internal combustion engines operate in SJV?
    2. Of that, how many/what percent are spark-ignited (SI) engines?
    3. Of that, how many/what percent are lean-burn SI engines?
        - What size are these engines?
        - What is the model year of these engines?
        - How many/what percentage have controls installed?
        - What are the current controls being used on these engines?
        - What NOx limit is the engine meeting?
        - Where are the engines located?
    4. How many/what percent are rich-burn SI engines?
        - What size are these engines?
        - What is the model year of these engines?
        - How many/what percentage have controls installed?
        - What are the current controls being used on these engines?
        - What NOx limit is the engine meeting?
        - Where are the engines located?
    5. What are operating hours for the engines (how many hours pers year)?

- Provide documentation to support the nine items on pages C-232 through C-234 of the District's plan that provide a rationale for the technological feasibility of additional controls on SI Engines in Agricultural operations. We note that this rationale was provided to the EPA in a June 25, 2015 email to Andy Steckel - we need additional information to support the rationale. For example, there are no citations to reports or documents from other sources nor references for what the statements are based on. Below are some examples of additional information that could help support the District's claim that the NOx limits on non-AO engines are not ultimately economically feasible for AO engines for some of the categories – any additional information (beyond these examples below) from the District would be welcomed.
    1. Engine power losses from adding controls
        - Provide a citation that shows power demand for additional controls reduces efficiency of engine.
        - Provide cost analysis of the power loss caused by additional controls and the additional cost to keep power at levels necessary to run the engine.
    2. Existing engines may require overhaul

- Provide costs for the engine overhauls or replacement (for AO engines to meet current non-AO engine NOx emission standards, currently appendix C only provides costs for replacing and retrofitting down to 11ppmv NOx). How is this different from non-AO engines that would need an overhaul?

3. Control systems must be custom designed
   - Control systems for non-AO engines must also be custom designed. Provide information on why custom design costs are not feasible for AO engines (while they presumably are for non-AO engines). For example, what are the costs for custom designing and maintaining a control system for an AO engine and what are the costs for custom designing and maintaining a control system for a non-AO engine? Also, provide citations on where these costs come from.
4. Engine can damage a control system
   - Are there examples where an AO engine damages a control system while a non-AO engine would not? Provide such examples and provide the costs associated with AO engine damages, examples of engine failure and damage due to increased control, and citations to catalyst damage.
5. Engines operated in remote locations
   - Provide costs analysis on why controlling oil and gas production remotely located engines are more economically feasible than AO engines which are located remotely.

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